IN THE CLAIMS:

Please cancel/amend/add claims as follows:

83. (Currently Amended) An apparatus for converting source data to a channel- modulated signal having a plurality of pairs of in-phase (I) and quadrature-phase (Q) data in a mobile station, wherein the mobile station uses ~~N~~ (N-1) number of data channels (N is an integer equal to or larger than two) and a control channel, the apparatus comprising:

channel coding means for encoding the source data to generate (N-1) number of data part and a control part, wherein the data part is allocated to the data channel and the control part is allocated to the control channel;

code generating means for generating spreading codes to be allocated to the channels, wherein each of the spreading codes is selected on the basis of a data rate of the data part and the control part and spreading codes are selected so that two consecutive pairs of the I and Q data are correspondent to two points located on the same point or symmetrical with respect to a zero point on a phase domain; and

spreading means for spreading the control part and the data part by using the spreading code, to thereby generate the channel-modulated signal,

wherein the spreading code is an orthogonal variable spreading factor (OVSF) code and wherein said channel coding means includes spreading factor generation means for generating a spreading factor related to the data rate of the data part and wherein the spreading code allocated

to the control channel is represented by $C_{256,0}$, and wherein 256 denotes the spreading factor and 0 a code number and the spreading codes allocated to first and second data channels are represented by $C_{4,1}$ = {1, 1, -1, -1}, respectively.

84. (Canceled)

85. (Canceled)

86. (Currently Amended) The apparatus as recited in claim ~~84~~ 83, wherein said code generating means includes:

control means responsive to the spreading factor, for generating code numbers for the channels; and

B1 Cont

spreading code generation means responsive to the spreading factor and the code number, for generating the spreading code to be allocated to the channels.

87. (Currently Amended) The apparatus as recited in claim ~~85~~ 86, wherein said spreading code generation means includes:

counting means for consecutively producing a count value in synchronization with a clock signal;

first spreading code generation means responsive to the count value and the spreading factor for generating the spreading code to be allocated to the data channel; and

second spreading code generation means responsive to the count value and the spreading factor for generating the spreading code to be allocated

to the control channel.

88. (Previously Presented) The apparatus as recited in claim 87, wherein the first spreading code generation means includes:

first logical operation means responsive to the count value for carrying out a logical operation with the spreading factor and the code number related to the data part, to thereby generate the spreading code related to the data part; and

first selection means for outputting the spreading code related to the data part in response to a select signal as the spreading factor related to the data part.

B1 Cont.

89. (Currently Amended) The apparatus as recited in claim 87, wherein the second spreading code generation means includes:

second logical operation means responsive to the count value for carrying out a logical operation with the spreading factor and the code number related to the control part, to thereby generate the spreading code related to the control part; and

second selection means for outputting the spreading code related to the control part in response to a select signal as the spreading factor related to the control part.

90. (Previously Presented) The apparatus as recited in claim 89, wherein said second logical operation means receives a code number of $I_7I_6I_5I_4I_3I_2I_1I_0$, a count value of $B_7B_6B_5B_4B_3B_2B_1B_0$ and a predetermined

spreading factor.

91. (Previously Presented) The apparatus as recited in claim 90, wherein the second logical operation means carries out a logical operation of $\prod_{i=0}^{N-2} {}^{\oplus} I_i \bullet B_{N-1-i}$ if the predetermined spreading factor is 2^N where N is 2 to 8.

92. (Currently Amended) The apparatus as recited in claim ~~87~~ 88, wherein said first logical operation means receives a code number of $I_7I_6I_5I_4I_3I_2I_1I_0$, a count value of $B_7B_6B_5B_4B_3B_2B_1B_0$ and a predetermined spreading factor.

B1 Cont

93. (Previously Presented) The apparatus as recited in claim 92, wherein the first logical operation means carries out a logical operation of $\prod_{i=0}^{N-2} {}^{\oplus} I_i \bullet B_{N-1-i}$ if the predetermined spreading factor is 2^N where N is 2 to 8.

94. (Currently Amended) The apparatus as recited in claim ~~9~~ 87, wherein said counting means includes an 8-bit counter when the 2^N is a maximum spreading factor.

95. (Currently Amended) The apparatus as recited in claim ~~10~~ 87, wherein said counting means includes an 8-bit counter when the 2^N is a maximum spreading factor.

96. (Currently Amended) The apparatus as recited in claim ~~93~~ 89, wherein said first and second logical operation means include a plurality of AND gates and a plurality of exclusive OR gates, respectively.

97. (Previously Presented) The apparatus as recited in claim 96, wherein said first and second selection means include a multiplexer, respectively.

98. (Canceled)

B1 cont

99. (Currently Amended) The apparatus as recited in claim ~~98~~ 83, wherein said mobile station includes two, three, four, five or six data channels.

100. (Canceled)

101. (Currently Amended) The apparatus as recited in claim ~~100~~ 83, wherein the spreading factor related to the data part is 2^N where N = 2 to 8 and wherein the code number related to the data part is $2^N/4$ and wherein the data part is allocated to the data channel.

102. (Currently Amended) The apparatus as recited in claim ~~86~~ 83, wherein said code generating means further includes;

signature generation means for generating a predetermined signature; and

scrambling code generation means for generating a scrambling code.

103. (Previously Presented) The apparatus as recited in claim 102, wherein the code numbers related to the data part and the control part are dependent on the predetermined signature, if the scrambling code is shared by multiple mobile stations and wherein the data part and the control part are allocated to the data channel and the control channel, respectively.

104. (Previously Presented) The apparatus as recited in claim 103, wherein the spreading factor related to the control part is 256 and wherein the code number related to the control part is 16(S-1)+15 where S = 1 to 16 and S is the predetermined signature.

B1 Cont.

105. (Previously Presented) The apparatus as recited in claim 104, wherein the spreading factor related to the data part is 2^N where N = 5 to 8 and wherein the code number related to the data part is $2^N(S-1)/16$.

106. (Currently Amended) The apparatus as recited in claim 83, further comprising:

scrambling means for scrambling the data and control parts and a scrambling code, to thereby rotate the two points and ~~generates~~ generate scrambled signals.

107. (Previously Presented) The apparatus as recited in claim 106, further comprising:

filtering means for pulse-shaping the scrambled signals and

generating pulse-shaped signals; and

gain adjusting means for adjusting gain of each of the pulse-shaped signals.

108. (Previously Presented) The apparatus as recited in claim 106, wherein one of the two points is rotated to clockwise direction and the other is rotated to counterclockwise direction by a phase of 45°, respectively.

109. (Previously Presented) The apparatus as recited in claim 108, wherein a phase difference between the rotated points is 90°.

B1 Cont.

110. (Canceled)

111. (Currently Amended) The apparatus as recited in claim ~~110~~ 83, wherein said mobile station includes three or four data channels and the spreading codes allocated to the third and fourth data channels are represented by $C_{4,3} = \{1, -1, -1, 1\}$, respectively.

112. (Currently Amended) The apparatus as recited in claim ~~111~~ 83, wherein said mobile station includes five or six data channels and the spreading codes allocated to the third and fourth data channels are represented by $C_{4,3} = \{1, -1, -1, 1\}$, respectively, and the spreading codes allocated to the fifth and sixth data channels are represented by $C_{4,2} = \{1, -1, 1, -1\}$, respectively.

113. (Currently Amended) A mobile station for converting source data to a channel-modulated signal having a plurality of pairs of in-phase (I) and quadrature-phase (Q) data, wherein the mobile station uses ~~N~~ (N-1) number of data channels where N is a positive integer (N is equal to or ~~lager~~ larger than two) and a control channel, the mobile station comprising:

channel coding means for encoding the source data to generate (N-1) number of data parts and a control part, wherein the data part is allocated to the data channel and the control part is allocated to the control channel;

B1 Cont

code generating means for generating N number of spreading codes to be allocated to the channels, wherein each of the spreading codes is selected on the basis of a data rate of each data part and the control part and the spreading codes are selected so that two consecutive pairs of the I and Q data are correspondent to two points located on the same point or symmetrical with respect to a zero point on a phase domain; and

spreading means for spreading the control part and the data parts by using the spreading codes, to thereby generate the channel-modulated signal,

wherein the spreading code is an orthogonal variable spreading factor (OVSF) code and wherein said channel coding means includes spreading factor generation means for generating a spreading factor related to the data rate of the data part, and

wherein the spreading code allocated to the control channel is represented by $C_{256,0}$, and wherein 256 denotes the spreading factor and 0 the code number,

wherein in case said mobile station includes one data channel, the spreading factor related to the data part is 2^N where N = 2 to 8 and wherein the code number related to the data part is $2^N/4$

and wherein in case said mobile station includes at least two data channels, the spreading codes allocated to first and second data channels are represented by $C_{4,1} = \{1, 1, -1, -1\}$, respectively.

114. (Currently Amended) The mobile station as recited in claim 113, wherein ~~the spreading code includes an orthogonal variable spreading factor (OVSF) code~~ said mobile station includes three or four data channels and the spreading codes allocated to the third and fourth data channels are represented by $C_{4,3} = \{1, -1, -1, 1\}$, respectively.

B1 Cont.

115. (Currently Amended) The mobile station as recited in claim ~~114~~ 113, ~~further comprising:~~

~~central processing unit coupled to said channel coding means;~~

~~user interface means coupled to the central processing unit for receiving a user input data from a user; and~~

~~source data generation means coupled to said channel coding means for generating the source data~~ wherein said mobile station includes five or six data channels and the spreading codes allocated to the third and fourth data channels are represented by $C_{4,3} = \{1, -1, -1, 1\}$, respectively, and the spreading codes allocated to the fifth and sixth data channels are represented by $C_{4,2} = \{1, -1, 1, -1\}$, respectively.

116. (Previously Presented) The mobile station as recited in claim 115, further comprising:

frequency converting means coupled to said spreading means for converting the channel-modulated signal to a radio frequency signal; and

antenna for sending the radio frequency signal to a base station.

117. (Currently Amended) A method for converting source data to a channel-modulated signal having a plurality of pairs of in-phase (I) and quadrature-phase (Q) data in a mobile station, wherein the mobile station uses ~~N~~ (N-1) number of data channels (N is an integer equal to or larger than two) and a control channel, the method comprising the steps of:

B1 Cont

a) encoding the source data to generate (N-1) number of ~~at least one~~ data part and a control part, wherein the data part is allocated to the data channel and the control part is allocated to the control channel;

b) generating spreading codes to be allocated to the channels, wherein each of the spreading codes is selected on the basis of a data rate of the data part and the control part and spreading codes are selected so that two consecutive pairs of the I and Q data are correspondent to two points located on the same point or symmetrical with respect to a zero point on a phase domain; and

c) spreading the control part and the data part by using the spreading code, to thereby generate the channel-modulated signal,

wherein the spreading code is an orthogonal variable spreading factor (OVSF) code and the spreading code allocated to the control channel is represented by $C_{256,0}$, and wherein 256 denotes spreading factor and a 0 code number and the spreading codes allocated to first and second data

channels are represented by $C_{4,1}$ = {1, 1, -1, -1}, respectively.

118. (Canceled)

119. (Previously Presented) The method as recited in claim 117, wherein said step a) includes the steps of:

a1) encoding the source data to generate the data part and the control part; and

a2) generating a spreading factor related to the data rate of the data part.

B1 Cont.

120. (Previously Presented) The method as recited in claim 119, wherein said step b) includes the steps of:

b1) generating code numbers for the channels in response to the spreading factor; and

b2) generating the spreading code to be allocated to the channels in response to the spreading factor and the code number.

121. (Previously Presented) The method as recited in claim 120, wherein said mobile station includes a data channel and a control channel for PRACH application.

122. (Previously Presented) The method as recited in claim 120, wherein said step b2) includes the steps of:

b2-a) producing a count value in synchronization with a clock signal; and

b2-b) carrying out a logical operation with the spreading factor and the code number related to the data part and the control part in response to the count value, to thereby generate the spreading code related to the data part.

123. (Previously Presented) The method as recited in claim 122, wherein the code number and the count value are represented by an 8-bit signal of $I_7I_6I_5I_4I_3I_2I_1I_0$ and an 8-bit signal of $B_7B_6B_5B_4B_3B_2B_1B_0$, respectively.

B1 cont

124. (Previously Presented) The method as recited in claim 123, wherein the logical operation is accomplished by $\prod_{i=0}^{N-2} {}^{\oplus} I_i \bullet B_{N-1-i}$ if the spreading factor is 2^N where N is 2 to 8.

125. (Canceled)

126. (Currently Amended) The method as recited in claim ~~125~~ 117, wherein the mobile station includes two, three, four, five or six data channels.

127. (Canceled)

128. (Currently Amended) The method as recited in claim ~~127~~ 120, wherein the spreading factor related to the data part is 2^N where N = 2 to 8 and wherein the code number related to the data part is $2^N/4$ ~~and wherein the data part is allocated to the data channel~~.

129. (Currently Amended) The method as recited in claim 121, wherein said step b) further includes the steps of~~;~~ :

b3) generating a predetermined signature; and

b4) generating a scrambling code.

130. (Previously Presented) The method as recited in claim 129, wherein the code numbers related to the data part and the control part are dependent on the predetermined signature, if the scrambling code is shared by multiple mobile stations and wherein the data part and the control part are allocated to the data channel and the control channel, respectively.

B1 Cont.

131. (Previously Presented) The method as recited in claim 130, wherein the spreading factor related to the control part is 256 and wherein the code number related to the control part is 16(S-1)+15 where S = 1 to 16 and S is the predetermined signature.

132. (Previously Presented) The method as recited in claim 131, wherein the SF related to the data part is 2^N where N = 5 to 8 and wherein the code number related to the data part is $2^N(S-1)/16$.

133. (Previously Presented) The method as recited in claim 117, further comprising the step of:

d) scrambling the data and control parts and a scrambling code, to thereby rotate the two points and generate scrambled signals.

134. (Previously Presented) The method as recited in claim 133, further comprising the step of:

e) filtering the scrambled signals and generating pulse-shaped signals; and

f) adjusting gain of the pulse-shaped signals.

135. (Previously Presented) The method as recited in claim 117, wherein one of the two points is rotated to clockwise direction and the other is rotated to counterclockwise direction by a phase of 45°, respectively.

B1 cont.

136. (Previously Presented) The method as recited in claim 135, wherein a phase difference between the rotated points is 90°.

137. (Canceled)

138. (Currently Amended) The method as recited in claim ~~136~~ 117, wherein said mobile station includes three or four data channels and the spreading codes allocated to the third and fourth data channels are represented by $C_{4,3}$ = {1, -1, -1, 1}, respectively.

139. (Currently Amended) The method as recited in claim ~~138~~ 117, wherein said mobile station includes five or six data channels and the spreading codes allocated to the third and fourth data channels are represented by $C_{4,3}$ = {1, -1, -1, 1}, respectively, and the spreading

codes allocated to the fifth and sixth data channels are represented by $C_{4,2} = \{1, -1, 1, -1\}$, respectively.

140. (Previously Presented) The apparatus as recited in claim 85, wherein said mobile station includes a data channel and a control channel for PRACH application.

141. (New) A method for converting source data to a channel-modulated signal having a plurality of pairs of in-phase (I) and quadrature-phase (Q) data in a mobile station, wherein the mobile station uses at least one data channel and a control channel, the method comprising the steps of:

a) encoding the source data to generate at least one data part and a control part, wherein the data part is allocated to the data channel and the control part is allocated to the control channel;

b) generating spreading codes to be allocated to the channels, wherein each of the spreading codes is selected on the basis of a data rate of the data part and the control part and spreading codes are selected so that two consecutive pairs of the I and Q data are correspondent to two points located on the same point or symmetrical with respect to a zero point on a phase domain; and

c) spreading the control part and the data part by using the spreading code, to thereby generate the channel-modulated signal,

wherein the spreading code allocated to the control channel is represented by $C_{256,0}$, 256 denoting the spreading factor and 0 the code number,

wherein case said mobile station includes one data channel, the spreading factor related to the data part is 2^N where N = 2 to 8 and wherein the code number related to the data part is $2^N/4$

and wherein case said mobile station includes at least two data

channels, the spreading codes allocated to first and second data channels are represented by $C_{4,1} = \{1, 1, -1, -1\}$, respectively.

142. (New) The method as recited in claim 141, wherein said mobile station includes three or four data channels and the spreading codes allocated to the first and second data channels are represented by $C_{4,1} = \{1, 1, -1, -1\}$, respectively, and the spreading codes allocated to the third and fourth data channels are represented by $C_{4,3} = \{1, -1, -1, 1\}$, respectively.

B1 cont

143. (New) The method as recited in claim 141, wherein said mobile station includes five or six data channels and the spreading codes allocated to the first and second data channels are represented by $C_{4,1} = \{1, 1, -1, -1\}$, respectively, and the spreading codes allocated to the third and fourth data channels are represented by $C_{4,3} = \{1, -1, -1, 1\}$, respectively, and the spreading codes allocated to the fifth and sixth data channels are represented by $C_{4,2} = \{1, -1, 1, -1\}$, respectively.

144. (New) An apparatus for converting source data to a channel-modulated signal having a plurality of pairs of in-phase (I) and quadrature-phase (Q) data in a mobile station, wherein the mobile station uses a data channel and a control channel, the apparatus comprising:

channel coding means for encoding the source data to generate a data part and a control part, wherein the data part is allocated to the data channel and the control part is allocated to the control channel;

code generating means for generating spreading codes to be allocated to the channels; and

spreading means for spreading the control part and the data part by using the spreading code, to thereby generate the channel-modulated signal,

wherein the spreading code is an orthogonal variable spreading factor (OVSF) code and wherein said channel coding means includes spreading factor generation means for generating a spreading factor related to the data rate of the data part and wherein the spreading code allocated to the control channel is represented by $C_{256,0}$, and wherein 256 denotes the spreading factor and 0 the code number and the spreading factor related to the data part is 2^N where $N = 2$ to 8 and wherein the code number related to the data part is $2^N/4$.

145. (New) A method for converting source data to a channel-modulated signal having a plurality of pairs of in-phase (I) and quadrature-phase (Q) data in a mobile station, wherein the mobile station uses a data channel and a control channel, the method comprising the steps of:

a) encoding the source data to generate (N-1) number of data part and a control part, wherein the data part is allocated to the data channel and the control part is allocated to the control channel;

b) generating spreading codes to be allocated to the channels, wherein each of the spreading codes is selected on the basis of a data

rate of the data part and the control part and spreading codes are selected so that two consecutive pairs of the I and Q data are correspondent to two points located on the same point or symmetrical with respect to a zero point on a phase domain; and

c) spreading the control part and the data part by using the spreading code, to thereby generate the channel-modulated signal,

wherein said step a) includes the steps of:

a1) encoding the source data to generate the data part and the control part; and

B1 Cont.

a2) generating a spreading factor related to the data rate of the data part,

wherein said step b) includes the steps of:

b1) generating code numbers for the channels in response to the spreading factor; and

b2) generating the spreading code to be allocated to the channels in response to the spreading factor and the code number,

wherein the spreading code is an orthogonal variable spreading factor (OVSF) code and the spreading code allocated to the control channel is represented by $C_{256,0}$, and wherein 256 denotes spreading factor and 0 code number and the spreading factor related to the data part is 2^N where N = 2 to 8 and wherein the code number related to the data part is $2^N/4$.

146. (New) An apparatus for converting source data to a

channel-modulated signal having a plurality of pairs of in-phase (I) and quadrature-phase (Q) data in a mobile station, wherein the mobile station uses N number channels (N is an integer equal to or larger than two), the apparatus comprising:

channel coding means for encoding the source data to generate (N-1) number of data part and a control part, said channel coding means including spreading factor generation means for generating a spreading factor related to a date of the data part;

code generating means for generating spreading codes to be allocated to the channels, said spreading codes including an orthogonal variable spreading factor (OVSF) code, wherein each of the spreading codes is selected on the basis of the data rate of the data part and the control part and spreading codes are selected so that two consecutive pairs of the I and Q data are correspondent to two points located on the same point or symmetrical with respect to a zero point on a phase domain;

B1 Cont.

spreading means for spreading the control part and the data part by using the spreading code, to thereby generate the channel-modulated signal; and

said code generating means including,

control means responsive to the spreading factor for generating code numbers for the channels; and

spreading code generation means responsive to the spreading factor and the code numbers, for generating the spreading code to be allocated to the channels, said spreading code generation means including counting means for consecutively producing a count value in synchronization with a clock signal, first spreading code generation means responsive

to the count value and the spreading factor for generating the spreading code to be allocated to the data channel, and second spreading code generation means responsive to the count value and the spreading factor for generating the spreading code to be allocated to the control channel.

147. (New) An apparatus for converting source data to a channel-modulated signal having a plurality of pairs of in-phase (I) and quadrature-phase (Q) data in a mobile station, wherein the mobile station uses N number channels (N is an integer equal to or larger than two), the apparatus comprising:

B1 Cont.

channel coding means for encoding the source data to generate (N-1) number of data part and a control part, said channel coding means including spreading factor generation means for generating a spreading factor related to a date of the data part;

code generating means for generating spreading codes to be allocated to the channels, said spreading codes including an orthogonal variable spreading factor (OVSF) code, wherein each of the spreading codes is selected on the basis of the data rate of the data part and the control part and spreading codes are selected so that two consecutive pairs of the I and Q data are correspondent to two points located on the same point or symmetrical with respect to a zero point on a phase domain;

spreading means for spreading the control part and the data part by using the spreading code, to thereby generate the channel-modulated signal; and

said code generating means including,

control means responsive to the spreading factor for generating

code numbers for the channels;

spreading code generation means responsive to the spreading factor and the code numbers, for generating the spreading code to be allocated to the channels;

signature generation means for generating a predetermined signature; and

scrambling code generation means for generating a scrambling code;

21 Cont.

wherein the code numbers related to the data part and the control part are dependent on the predetermined signature, if the scrambling code is shared by multiple mobile stations and wherein the data part and the control part are allocated to the data channel and the control channel, respectively.

148. (New) An apparatus for converting source data to a channel-modulated signal having a plurality of pairs of in-phase (I) and quadrature-phase (Q) data in a mobile station, wherein the mobile station uses N number channels (N is an integer equal to or larger than two), the apparatus comprising:

channel coding means for encoding the source data to generate (N-1) number of data part and a control part;

code generating means for generating spreading codes to be allocated to the channels, wherein each of the spreading codes is selected on the basis of a data rate of the data part and the control part and spreading codes are selected so that two consecutive pairs of the I and Q data are correspondent to two points located on the same point or symmetrical

with respect to a zero point on a phase domain;

spreading means for spreading the control part and the data part by using the spreading code, to thereby generate the channel-modulated signal;

scrambling means for scrambling the data and control parts and a scrambling code, to thereby rotate the two points and generate scrambled signals;

filtering means for pulse-shaping the scrambled signals and generating pulse-shaped signals; and

gain adjusting means for adjusting the gain of each of the pulse-shaped signals.

B1 Cont.

149. (New) A mobile station for converting source data to a channel-modulated signal having a plurality of pairs of in-phase (I) and quadrature-phase (Q) data, wherein the mobile station uses N number of channels where N is a positive integer (N is equal to or larger than two), the mobile station comprising:

channel coding means for encoding the source data to generate (N-1) number of data parts and a control part;

code generating means for generating N number of spreading codes to be allocated to the channels, said spreading codes including an orthogonal variable spreading factor (OVSF) code, wherein each of the spreading codes is selected on the basis of a data rate of each data part and the control part and the spreading codes are selected so that two consecutive pairs of the I and Q data are correspondent to two points located on the same point or symmetrical with respect to a zero point

on a phase domain;

spreading means for spreading the control part and the data parts by using the spreading codes, to thereby generate the channel-modulated signal;

a central processing unit coupled to said channel coding means;

user interface means coupled to the central processing unit for receiving a user input data from a user; and

source data generation means coupled to said channel coding means for generating the source data.

B1 Cont.

150. (New) A method for converting source data to a channel-modulated signal having a plurality of pairs of in-phase (I) and quadrature-phase (Q) data in a mobile station, wherein the mobile station uses N number channels (N is equal to or larger than two), the method comprising the steps of:

a) encoding the source data to generate at least one data part and a control part by,

a1) encoding the source data to generate the data part and the control part; and

a2) generating a spreading factor related to the data rate of the data part;

b) generating spreading codes to be allocated to the channels, wherein each of the spreading codes is selected on the basis of a data rate of the data part and the control part and spreading codes are selected so that two consecutive pairs of the I and Q data are correspondent to two points located on the same point or symmetrical with respect to a zero

point on a phase domain, said step of generating spreading codes including,

b1) generating code numbers for the channels in response to the spreading factor;

b2) generating the spreading code to be allocated to the channels in response to the spreading factor and the code number.

151. (New) A method for converting source data to a channel-modulated signal having a plurality of pairs of in-phase (I) and quadrature-phase (Q) data in a mobile station, wherein the mobile station uses N number channels (N is equal to or larger than two), the method comprising the steps of:

B1 Cont.

a) encoding the source data to generate at least one data part and a control part;

b) generating spreading codes to be allocated to the channels, wherein each of the spreading codes is selected on the basis of a data rate of the data part and the control part and spreading codes are selected so that two consecutive pairs of the I and Q data are correspondent to two points located on the same point or symmetrical with respect to a zero point on a phase domain;

c) spreading the control part and the data part by using the spreading code, to thereby generate the channel-modulated signal;

d) scrambling the data and control parts and a scrambling code, to thereby rotate the two points and generate scrambled signals;

e) filtering the scrambled signals and generating pulse-shaped

31 Cont.

signals; and

f) adjusting gain of the pulse-shaped signals.